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# EXERCISE

## FOR HEALTH AND CORRECTION

FRANK D. DICKSON, M.D.  
AND  
REX L. DIVELEY, M.D.

RM721 .D5

Exercise for health and correction.

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# EXERCISE

## FOR HEALTH AND CORRECTION

BY  
FRANK D. DICKSON, M.D.,  
AND  
REX L. DIVELEY, M.D.



PHILADELPHIA AND LONDON  
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## PREFACE

WHEN one seeks to recommend a guide for physical exercise, it is often difficult to find just the kind of manual wished. Books on gymnastics usually come under one of three heads, either they are written to exploit some cult or system and are filled with incorrect and misleading statements, or they are compiled by some inexperienced person, for sale in the form of booklets, usually a jumble of exercises with no definite object, or they are carefully written textbooks, by some well-known authority, which are too complex and technical for the ordinary individual. The result is a great number of books on physical exercise or training which are discouraging to any one who is seeking a clear, comprehensive and simple guide.

The pages which follow were written with but one purpose: to give to those interested in the building up of their bodies a brief but fairly complete and systematic manual of exercise. We have sought to avoid complexity in every way and to make the volume as concise and free from unnecessary detail as possible. To this end, the number of exercises has been held down to a minimum, only those being included which we feel will give the best result for each muscle group in the body.

Exercises used in the treatment of scoliosis, or curvature of the spine, have been purposely omitted. It is felt that such exercises can only be successfully used under the direct supervision of a trained instructor, and would be out of place in a work of this kind, intended largely as a guide for self-instruction.

The written text is as brief as can be made, it being expected that the numerous illustrations will explain more clearly than words the movements which make up each exercise.

The illustrations have been made from carefully taken photographs and show with exactness each movement to be executed. There is a brief introduction to each group of exercises which explains the purpose of that particular group.

It is hoped that by presenting the subject of exercise in this way many, who might be discouraged by the more complex text-books, will feel encouraged to take up the more simple and easily understood exercises described here. It is also our hope that those whose health demands that they take exercise—general or special—may find this a helpful guide to direct them in their work.

In the preparation of the illustrations, Mrs. May Brown has been of the greatest assistance and we wish to take this opportunity of expressing our thanks to her and her co-workers for the help they have given.

F. D. D. and R. L. D.

KANSAS CITY, MISSOURI.



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## INTRODUCTION

THE word exercise means exertion, bodily or mental, for training or improvement. Physical exercise has been used for centuries in training and for the improvement or treatment of medical and surgical conditions.

China, doubtless the most ancient of civilized nations, has used gymnastics since the earliest time in the treatment of disease. In Grecian medical history we find gymnastics occupying a very important place in the treatment of physical ailments. It is also well known that routine physical exercise was as much a part of the daily life of the ancient Greek as sleeping and eating, and this no doubt contributed in no small degree toward making them the healthy, sturdy people they were. From these early days down to the present, the popularity of exercise has never waned.

Physical exercise may broadly be considered under two heads; namely: exercise taken for pleasure or relaxation; pure physical exercise, and that taken for a special purpose; therapeutic or corrective exercise. The first group needs little comment here as it has to do with out-of-door sports and games, and these have their own rules and uses. Under the second group, we include all exercise which aims to strengthen and develop groups of muscles whether these be healthy or diseased.

Medical physical exercise, since it has a definite object, must consist of systematically arranged movements which, when properly executed, will build up particular muscle groups. Such an arrangement of movements constitutes an exercise. By combining a number of such exercises we can

arrange a set of exercises which will embrace the entire body. The entire set may be used or certain exercises may be stressed when we have a particular part of the body we wish to develop.

Having determined on a set of exercises, the manner in which these are executed becomes of paramount importance. The mental attitude should be a proper one. Exercise should not be approached in a spirit of antagonism, as though it was an unpleasant task which must be gone through. It should be done cheerfully and whole-heartedly. The mind should be alert and the attention concentrated on the exercise being done. If the attention wanders, the movements will be done in an inaccurate and perfunctory manner and most of the benefit will be lost. Effort is what counts, and we cannot have effort without attention.

Exactness in carrying out each exercise is essential to success. If we remember that each movement has a definite purpose, it is evident that unless each is correctly done, inexactness will result, and the exercise fail in its purpose, not through the fault of the exercise but because of faulty execution.

A clear understanding of each movement of an exercise should precede any attempt to go through the exercise as a whole. Only in this way can the exactness referred to in the preceding paragraph be assured.

If we have the proper attitude of mind, attention concentrated upon the work in hand, a clear understanding of the various movements of each exercise, and exactness of execution, we will accomplish our purpose. There will be a progressive increase in muscle tone and strength, a better poise and more elastic walk, and improvement in general health and endurance.



The exercises to follow are arranged in five groups. The first two groups are designed to tone up the muscles of the body as a whole and improve the general health. The three latter are intended for use in special conditions which are moderately prevalent and which may be favorably influenced by muscle training. The third and fourth groups include exercises which have proven of value in the treatment of poor carriage and visceroptosis. The fifth group is for use in conditions in which lack of muscle balance in the foot is present, such as flat-foot and fallen transverse arches.



**GROUP I**  
**BED EXERCISES**





# GROUP I

## BED EXERCISES

This set of exercises is primarily for the patient who has been debilitated for some time, and where muscles and ligaments have lost their tone and strength.

The patient should start with the easy and light exercises, working up to the more difficult and strenuous ones. They should be performed each morning upon awakening, and each evening before going to sleep. The cover should be thrown back, and all the windows opened for proper ventilation. Go through each exercise a definite number of times, and gradually increase the number each day. You will get benefit out of these exercises in direct proportion to the energy spent.



## EXERCISE No. 1

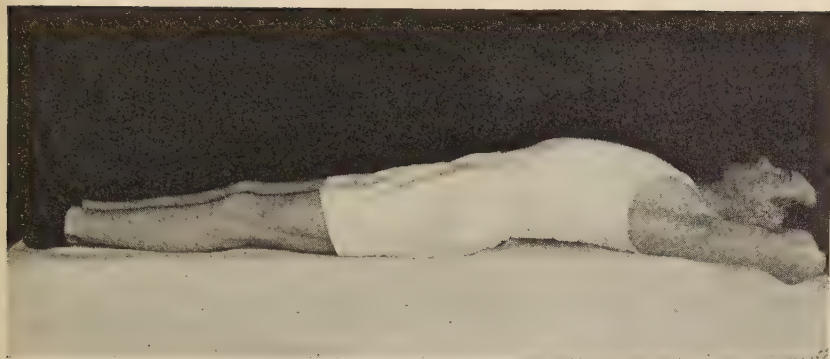


FIG. 1.

### EXERCISE No. 1. BREATHING EXERCISE.

This exercise is given to develop the muscles of the chest and diaphragm as well as to completely oxygenate the body. The breathing exercise should always be the first and last of your series.

**Position.**—Lying on back with feet together, hands under head, and chin thrown up (Fig. 1).

**Action.**—The exercise is done in two counts. On the count of one, completely exhale all the air in the lungs, and hold for a few seconds. Complete the exercise on the count of two by taking a full breath through the nose with mouth closed.

Repeat the exercise ten to twenty times.

## EXERCISE No. 2



FIG. 1.

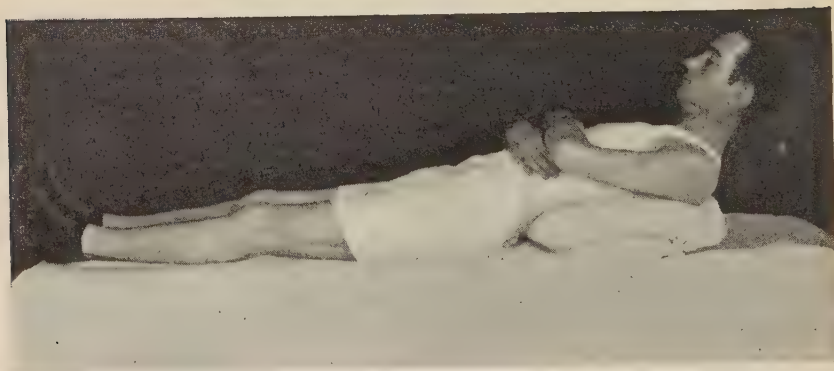


FIG. 2.



## EXERCISE NO. 2

### EXERCISE NO. 2. NECK EXERCISE.

This exercise will develop the muscles of the neck, chest and abdomen.

Position.—Lying on back with feet together, arms folded over abdomen, and a pillow folded under the shoulders (Fig. 1).

Action.—The exercise is performed in two counts. Starting from position, head touching bed. On the count of one, raise the head as far as possible, bending the chin onto the chest (Fig. 2). The shoulders must be held firmly on the pillow. Hold this position for a few seconds and then complete the exercise on the count of two by slowly lowering the head to the bed, assuming position one. Repeat the exercise ten to twenty times.

## EXERCISE No. 3

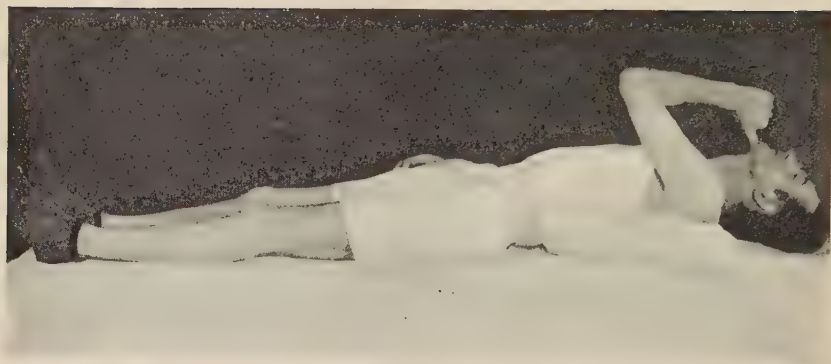


FIG. 1.



FIG. 2.

## EXERCISE No. 3

### EXERCISE No. 3. CHIN-NECK EXERCISE.

This exercise will develop all the muscles of the neck.

Position.—Lying on back with feet together, pillow folded under the shoulders, and pressing the chin upward with the thumb (Fig. 1).

Action.—The exercise is done in two counts. Starting from position, on the count of one, force the chin downward against the resistance of the thumb (Fig. 2). Complete the exercise on the count of two by pushing the chin into an erect position again, against the resistance of the muscles of the neck.

Repeat the exercise ten times.

## EXERCISE No. 4

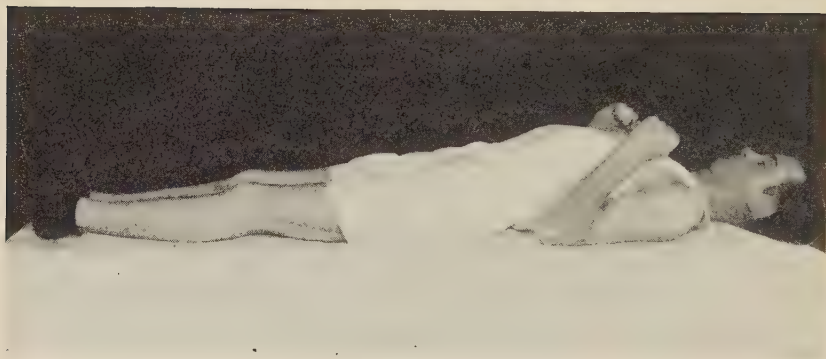


FIG. 1.

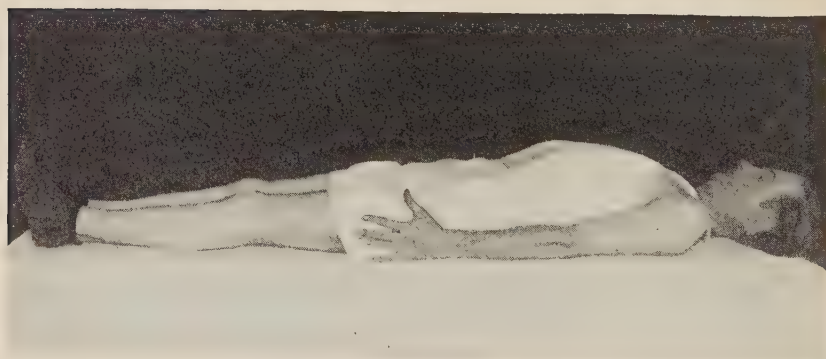


FIG. 2.



## EXERCISE NO. 4

### EXERCISE NO. 4. ARM AND HAND EXERCISE.

The exercise develops the muscles of the shoulders, arms, and hands.

Position.—Lying on back, feet together, hands clenched, and arms flexed on the chest (Fig. 1).

Action.—The exercise is performed in two counts. Starting from position, on the count of one, forcibly extend the arms to the sides and straighten the fingers (Fig. 2). Complete the exercise on the count of two by flexing the arms onto the chest and at the same time making fists with the hands. This exercise should be done with force and not too fast. Repeat ten times, taking a deep breath between each exercise.



## EXERCISE No. 5

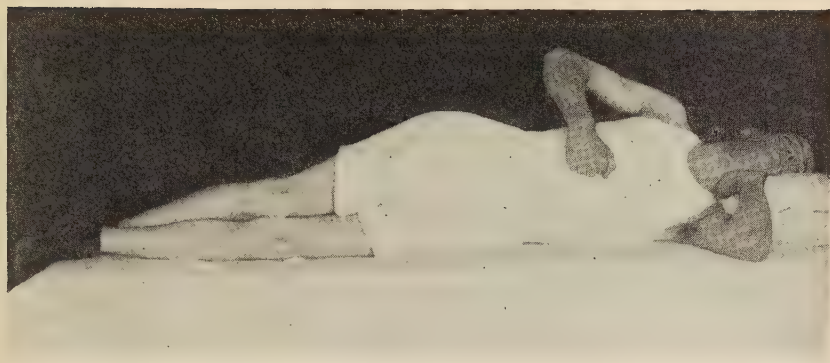


FIG. 1.

### EXERCISE No. 5. SHOULDER EXERCISE.

This exercise develops the muscles of the shoulders and arms.

**Position.**—Lying on side with lower hand under head, upper arm flexed on chest, and hand clenched (Fig. 1).

**Action.**—The exercise is performed by forcibly rotating the shoulder and elbow, forward and backward, holding the fist stationary on the chest, as a pivot. The exercise should be done ten to fifteen times, then turn onto the other side and repeat with the opposite shoulder.

Continue this rotary motion for two to three minutes.

## EXERCISE No. 6

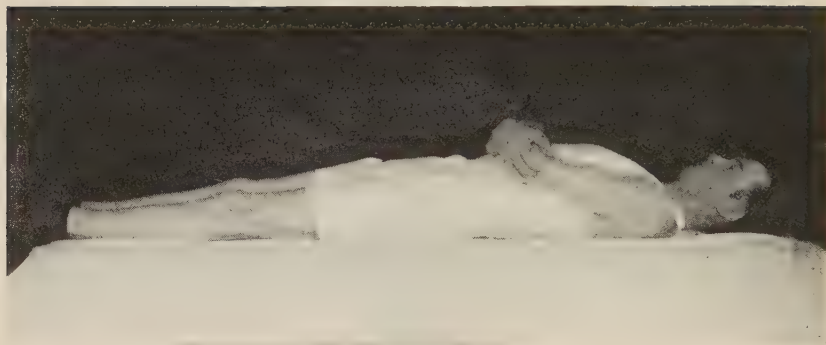


FIG. 1.

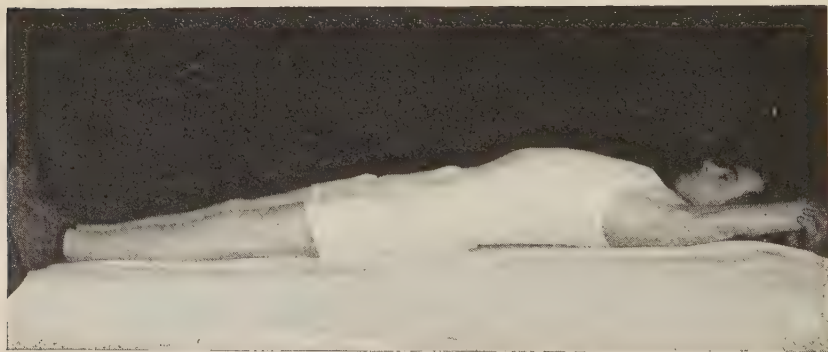


FIG. 2.

## EXERCISE No. 6

### EXERCISE No 6. ARM AND SHOULDER EXERCISE.

This exercise develops the muscles of the shoulders, arms, and chest.

**Position.**—Lying on back, feet together, arms folded over chest, and hands clutching the opposite elbow (Fig. 1).

**Action.**—The exercise is performed in two counts. Starting from position, on the count of one, rotate the interlocked arms upward and over the head until they touch the bed above (Fig. 2). Hold this position for a few seconds, then complete the exercise on the count of two by bringing the interlocked arms to the first position. The exercise should be repeated ten times.



## EXERCISE No. 7



FIG. 1.

### EXERCISE No. 7. ABDOMINAL EXERCISE.

This exercise develops the muscles of the abdominal wall.

**Position.**—Lying on back, feet together, and clenched fists resting on abdomen.

**Action.**—The exercise is performed by making the abdominal muscles tense, then starting to tap the abdominal wall with the fists, increasing the force of the beat as you can stand it.

Continue the tensing and tapping for two or three minutes.



## EXERCISE No. 8

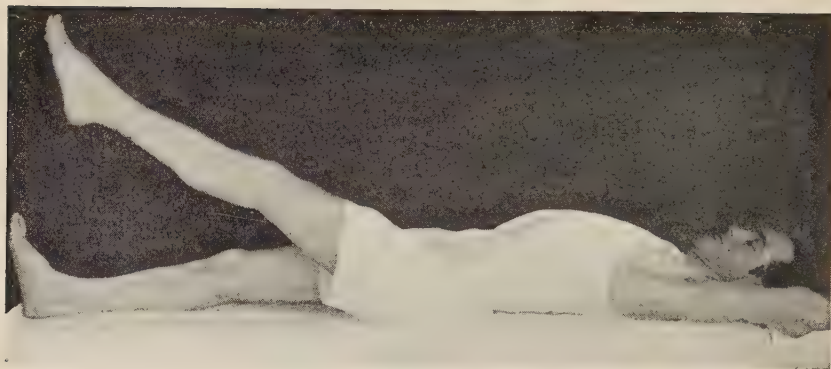


FIG. 1.

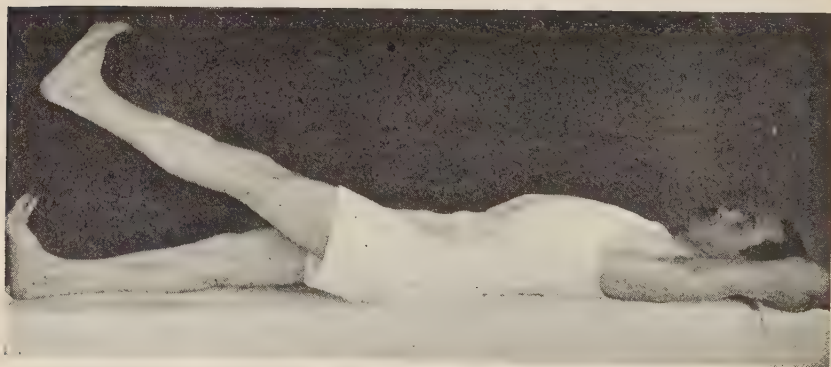


FIG. 2.

## EXERCISE No. 8

### EXERCISE No. 8. FOOT AND ANKLE EXERCISE.

This exercise develops the muscles of the feet and legs.

Position.—Lying on back with hands under head, leg extended and flexed at the hip to 45 degrees (Fig. 1).

Action.—The exercise is done in two counts. Starting from position, on the count of one, flex the ankle as far as possible (Fig. 2). Complete the exercise on the count of two by extending the foot to assume position one.

Repeat the exercise ten times with each foot.

## EXERCISE No. 9

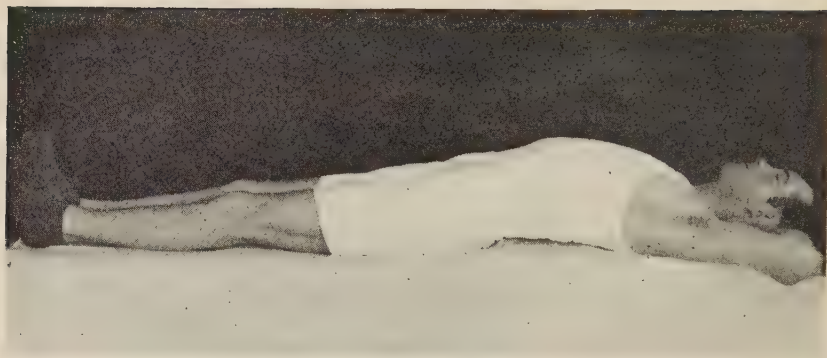


FIG. 1.

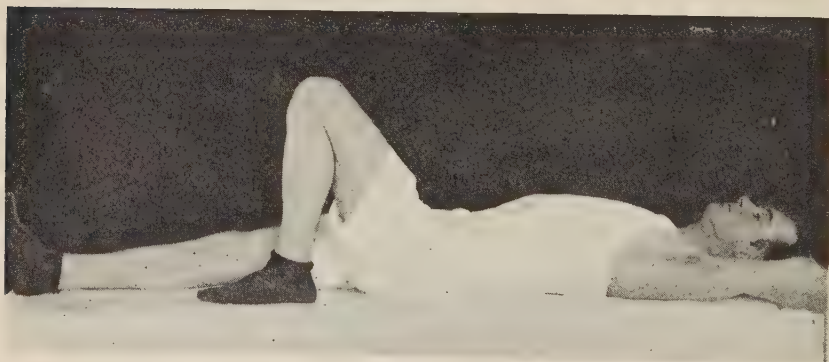


FIG. 2.

## EXERCISE No. 9

### EXERCISE No. 9. LEG EXERCISE.

This exercise develops the muscles of the leg and thigh.

Position.—Lying with feet together, and hands under head (Fig. 1).

Action.—The exercise is done in two counts. Starting from position, on the count of one, slowly flex the leg until the sole of the foot is parallel with the bed (Fig. 2). Complete the exercise on the count of two by slowly extending the leg until it reaches the first position.

Repeat the exercise with each leg, ten times.

## EXERCISE No. 10

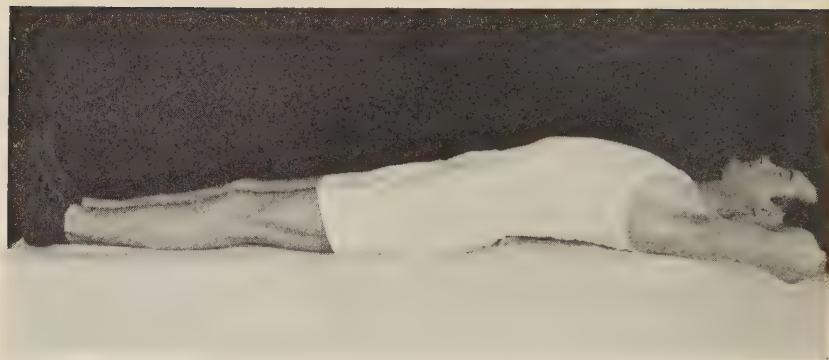


FIG. 1.



FIG. 2.

## EXERCISE No. 10

### EXERCISE No. 10. ABDOMEN AND LEG EXERCISE.

This exercise for the development of the legs and abdomen.

**Position.**—Lying on back with feet together, and hands under the head (Fig. 1).

**Action.**—The exercise is performed in two counts. Starting from position, on the count of one, slowly flex both legs, keeping them firmly together. When the legs are completely flexed, flex the thighs onto the abdomen as far as possible (Fig. 2). Hold this position for a few seconds. Then on the count of two, complete the exercise by slowly extending thighs and legs until they have reached the original position.

Keep the pelvis as stationary as possible during the entire exercise.

Repeat the exercise ten times.

## EXERCISE No. 11

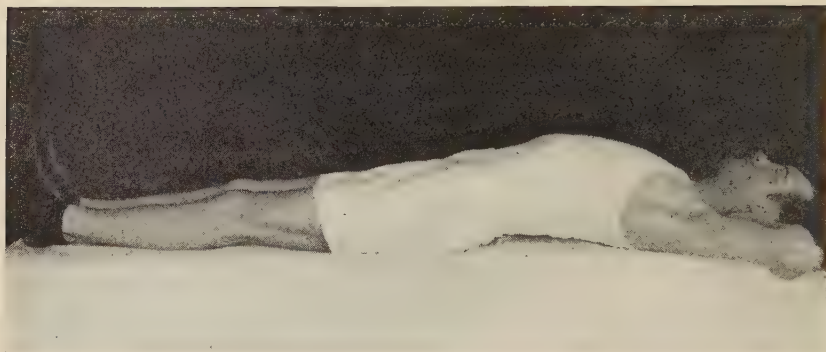


FIG. 1.

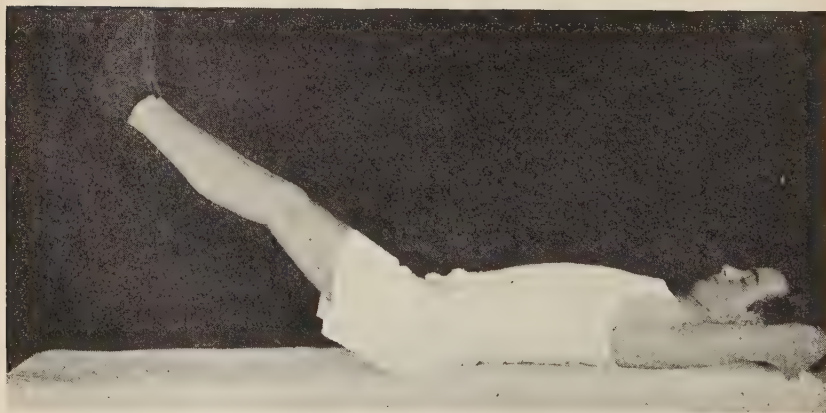


FIG. 2.



## EXERCISE No. 11

### EXERCISE No. 11. THIGH-TRUNK EXERCISE.

This exercise develops the muscles of the lower trunk and thighs and is excellent for those with a pendulous abdomen.

**Position.**—Lying on back with feet together, and hands under head (Fig. 1).

**Action.**—The exercise is done in two counts. Starting from position, on the count of one, raise both feet and legs until they reach an angle of about 45 degrees (Fig. 2). Hold this position for a few seconds. Complete the exercise by slowly lowering the legs to position one. Keep the pelvis firm on the bed, and hold feet and legs together during the entire exercise.

Repeat this exercise ten times.

## EXERCISE No. 12



FIG. 1.

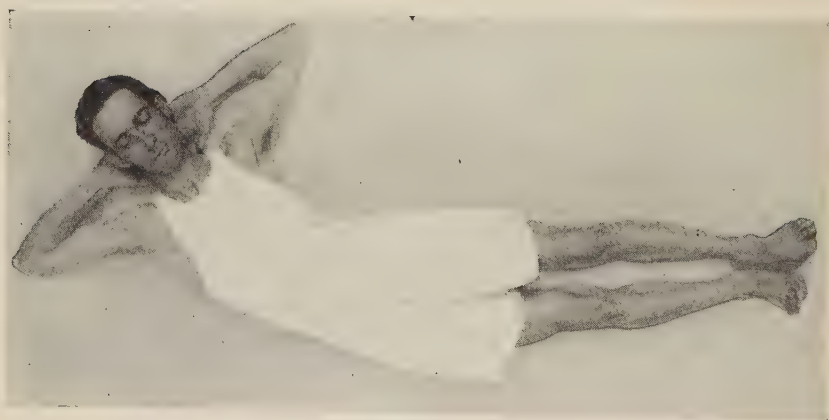


FIG. 2.

(Illustrations taken looking down from above.)

## EXERCISE No. 12

### EXERCISE No. 12. TRUNK EXERCISE.

This exercise is excellent for the muscular development of the trunk.

**Position.**—Lying on back with feet together, hands under head, and trunk acutely flexed to the left (Fig. 1).

**Action.**—The exercise is done in two counts. Starting from position, on the count of one, lift the shoulders off the bed and flex trunk to the right as far as possible (Fig. 2). On the count of two, again lift the shoulders from the bed and flex trunk to the left to assume the original position. Keep the pelvis stationary on the bed or table. Repeat ten times.

## EXERCISE No. 13



FIG. 1.

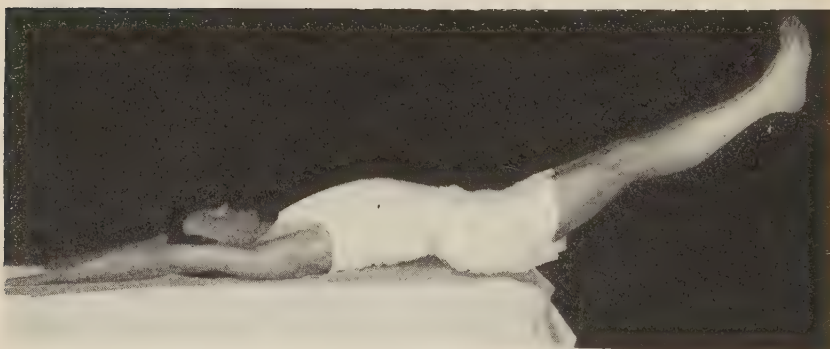


FIG. 2.

## EXERCISE No. 13

### EXERCISE No. 13. TRUNK-ABDOMINAL EXERCISE.

This is an excellent all-around exercise and will call into play every group of muscles in the body.

**Position.**—Lying on back with buttocks on the edge of bed, with knees stiff and legs hanging free (Fig. 1).

**Action.**—The exercise is performed in two counts. Starting from position, on the count of one, slowly raise the legs, keeping the knees stiff, until they reach an angle of 45 degrees (Fig. 2). Hold this position for a few seconds, and then complete the exercise on the count of two by slowly lowering the legs to the original position.

Repeat the exercise five times.



**GROUP II**  
**SETTING-UP EXERCISES**





## GROUP II

### SETTING-UP EXERCISES

Many of these exercises are used in the training of men for our army and navy. They are excellent not only for the debilitated but also for the person in perfect health. These naturally follow the bed exercises and when the patient is able to be up, may be substituted for the "bed exercises."

These exercises should be performed with precision and preferably each morning just after arising. The participant should start with the easy and light exercises and work up to the more difficult and strenuous ones.

## EXERCISE No. 1



FIG. 1.



FIG. 2.

## EXERCISE No. 1

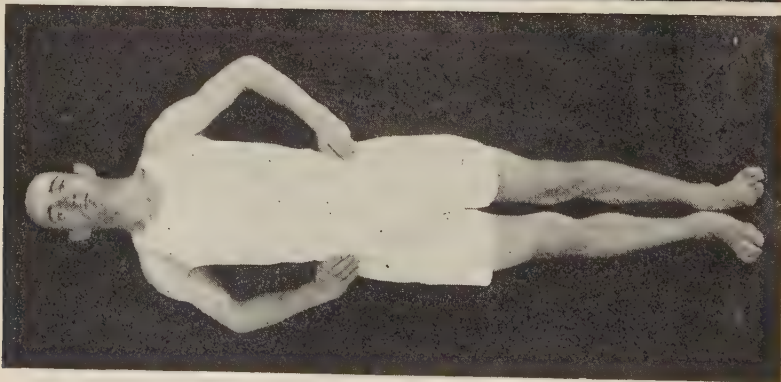
### EXERCISE No. 1. BREATHING EXERCISE.

This exercise develops the chest as well as completely oxygenizing the body. The procedure should be practised several times before entering into your routine of exercising.

**Position.**—Standing erect with hands on hips and head up.

**Action.**—The exercise is done in two counts. One, complete exhalation (Fig. 1). On the count of two, take a full breath through the nostrils, throwing the head well back (Fig. 2). Repeat the exercise ten to twenty times.

## EXERCISE No. 2



## EXERCISE NO. 2



FIG. 4.



FIG. 5.

### EXERCISE NO. 2. NECK-BENDING EXERCISE.

This exercise develops the muscles of the neck.

**Position.**—Standing erect with hands on hips, heels together, and head up (Fig. 1).

**Action.**—The exercise is done in eight counts. One, bend neck to the right as far as possible (Fig. 2). On count two, bring to the original position. Three, bend neck back (Fig. 3). Four, to erect position. Five, bend neck to the left (Fig. 4). Six, erect posture. Seven, bend neck forward (Fig. 5), and on eight, complete the exercise by returning to the original position.

Count the exercise out as you perform same, and keep the body erect at all times.

Repeat ten times.



## EXERCISE No. 3



FIG. 1.



FIG. 2.



## EXERCISE No. 3



FIG. 3.



FIG. 4.

### EXERCISE NO. 3. WRIST AND FINGER EXERCISE.

This exercise develops the muscles of the wrist and hands.

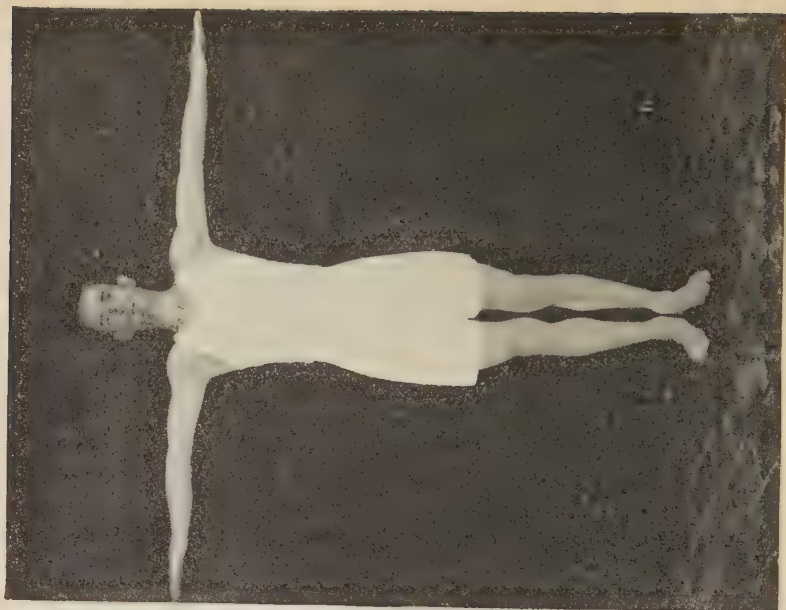
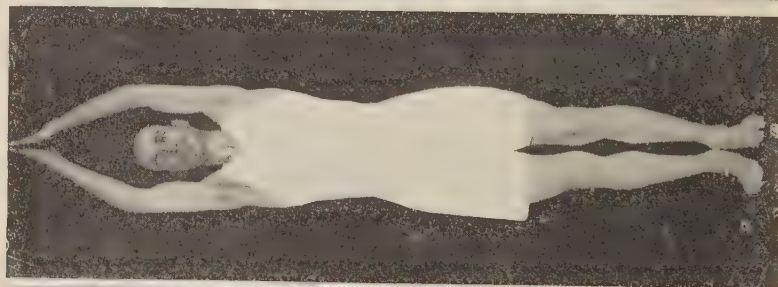
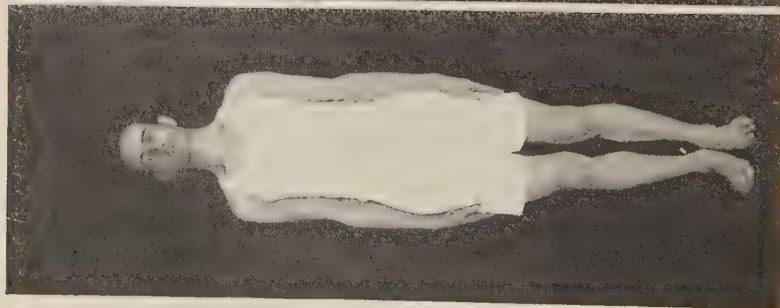
**Position.**—Standing with heels together, body erect, head up, arms out-stretched, and fingers extended (Fig. 1).

**Action.**—The exercise is done in five counts. Starting with the fingers extended, on the count of one, close the hand to make a fist (Fig. 2). Two, extend wrist upward (Fig. 3). Three, flex wrist downward (Fig. 4). Four, make wrist straight (Fig. 2). And complete the exercise on the count of five by extending the fingers to the original position.

Keep body erect and the arms straight during the entire exercise.

Repeat the exercise ten times.

## EXERCISE No. 4



## EXERCISE No. 4



FIG. 4.

### EXERCISE No. 4. ARM EXERCISE.

This exercise develops the muscles of the arms, hands, and shoulders.

**Position.**—Standing erect, heels together, hands to sides, and head up (Fig. 1).

**Action.**—The exercise may be divided into two parts. First, starting from position, on count one, raise hands up and over the head, rotating the arms so the palms will come together (Fig. 2). On count two, bring arms back to the sides.

For the second part, start with body erect and arms out-stretched to the sides with palms up (Fig. 3). On count one, flex arms, touching shoulders with the tips of fingers (Fig. 4). Complete the exercise on the count of two by extending arms to the original position,

Repeat exercise ten times.

## EXERCISE No. 5

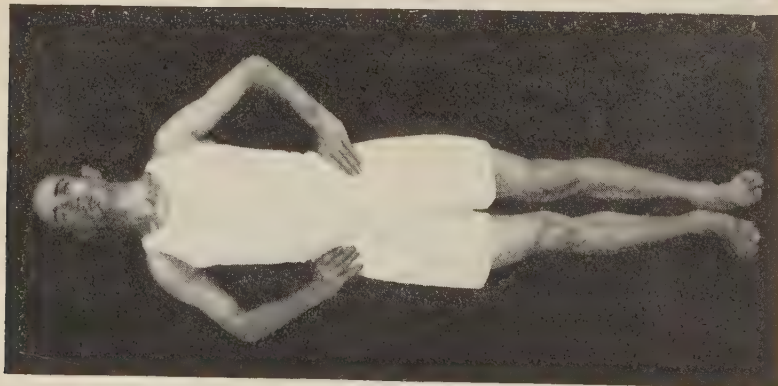


FIG. 1.



FIG. 2.



FIG. 3.



## EXERCISE No. 5



FIG. 4.

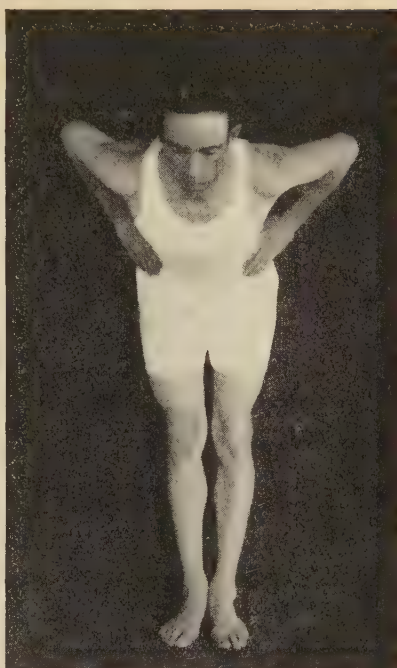


FIG. 5.

### EXERCISE NO. 5. TRUNK EXERCISE.

This exercise is excellent for the development of the trunk and abdominal muscles, as well as bringing many of the leg muscles into action.

**Position.**—Standing erect, heels together, hands on hips, and head up (Fig. 1).

**Action.**—The exercise is done in eight counts. Starting from position, on the count of one, bend trunk to the right, dropping the right hand to side (Fig. 2). On count two, back to original position. Three, bend trunk backward, throwing head back (Fig. 3). Four, to erect position. On count five, bend body to the left, dropping left hand to the side (Fig. 4). Six, assuming original posture. Seven, bending forward, holding upper spine as rigid as possible (Fig. 5). And complete the exercise on the count of eight by again taking the erect position.

Repeat ten times.

## EXERCISE NO. 6

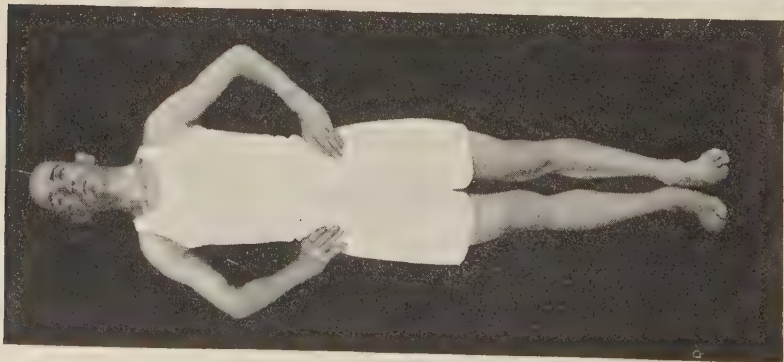


FIG. 1.

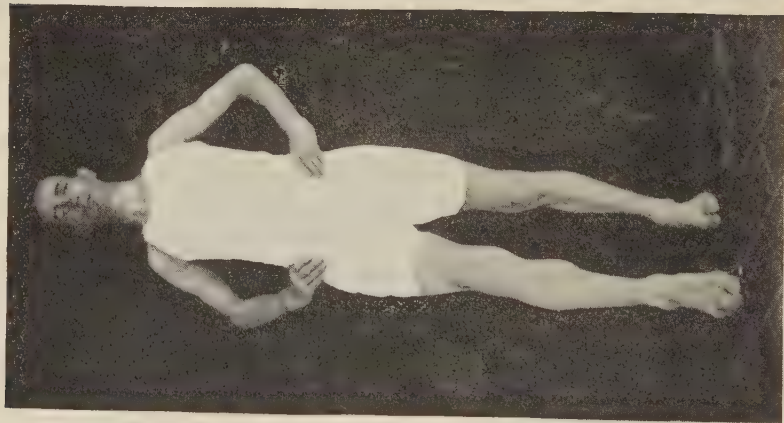


FIG. 2.



FIG. 3.

## EXERCISE No. 6



FIG. 4.

### EXERCISE No. 6. LEG EXERCISE.

This exercise develops the musculature of the entire leg and hip, and at the same time gives balance and poise to the body.

**Position.**—Standing, heels together, hands on hips, and head up (Fig. 1).

**Action.**—The exercise is done in six counts. Starting from position, on the count of one, extend the leg forward to an angle of 45 degrees (Fig. 2). Count two, back to the first position. Three, abduct the leg as far as possible to the side (Fig. 3). Four, take original position. On the count of five, flex leg backward, keeping the knee straight at all times (Fig. 4). And complete the exercise on the count of six by assuming the erect posture. The exercise should be repeated ten times for each leg.



## EXERCISE No. 7



FIG. 1.



FIG. 2.

## EXERCISE No. 7

### EXERCISE No. 7. ANKLE AND BALANCING EXERCISE.

This exercise develops the musculature of the leg and foot, as well as stimulating the equilibratory apparatus.

**Position.**—Standing erect on one foot, the other leg extended forward and foot flexed. Hands on hips and head up (Fig. 1).

**Action.**—The exercise is performed in two counts. Starting from position, on the count of one, completely extend the foot (Fig. 2). The exercise is then completed on the count of two by flexing the foot to the original position.

Repeat the exercise ten times with each leg.

## EXERCISE No. 8



FIG. 1.



FIG. 2.

## EXERCISE No. 8

### EXERCISE No. 8. SLAP AND STRADDLE EXERCISE.

This is a good general exercise and develops nearly all groups of muscles.

**Position.**—Standing, heels together, hands to sides, and head up (Fig. 1).

**Action.**—The exercise is performed in two counts. Starting from position, on the first count, jump straight into the air, throwing the hands over head, palms together, and alighting on feet with legs straddled (Fig. 2). On the count of two, jump again into the air, bringing hands down to sides and alighting with heels together as in first position.

Repeat the exercise five times.

## EXERCISE NO. 9

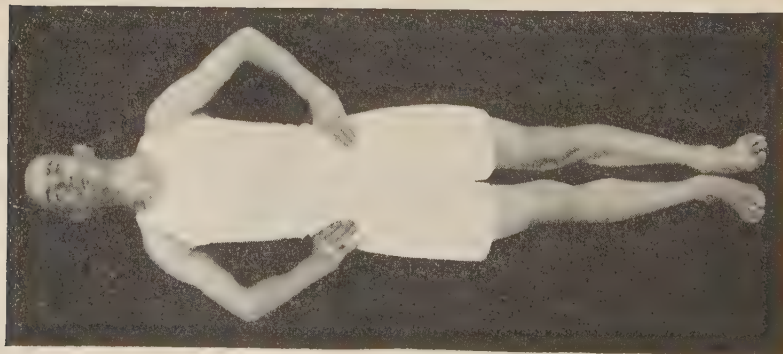


FIG. 1



FIG. 2



FIG. 3

## EXERCISE No. 9

### EXERCISE No. 9. SQUATTING ARM EXERCISE.

This is a good general exercise and while it develops all the skeletal muscles, it also tests and develops the equilibrium.

**Position.**—Standing erect, heels together, hands on hips, and head up (Fig. 1).

**Action**—This exercise is accomplished in four counts. Starting from position, on count one, slowly flex knees, bringing the body into a squatting position (Fig. 2). Do not let buttocks touch heels. On count two, raise hands over head, slapping palms together (Fig. 3). Three, bring hands again to hips and assume position two. Complete the exercise on the count of four by slowly raising body to the original position.

Keep the back rigid and erect during the entire exercise.

Repeat five to ten times.



## EXERCISE No. 10

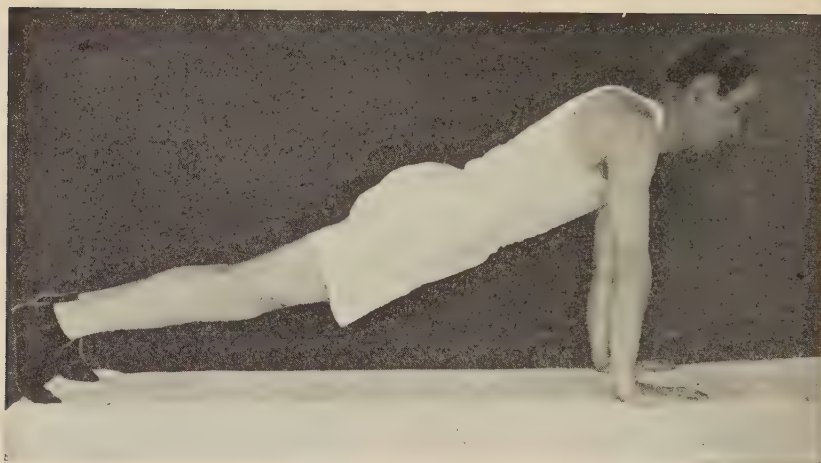


FIG. 1.

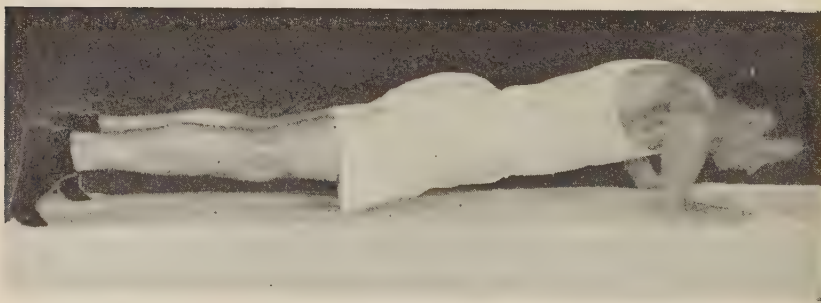


FIG. 2.



## EXERCISE No. 10

### EXERCISE No. 10. LEANING-REST EXERCISE.

This is rather a strenuous exercise, but is excellent for the development of the muscles of the arms and shoulders.

Position.—Leaning forward on hands and toes on floor, back straight, and head erect (Fig. 1).

Action.—The exercise is done in two counts. Starting from position, on the count of one, slowly flex the arms, allowing body to lower, touching chin to floor. Keep back and legs stiff (Fig. 2). On the count of two, complete the exercise by slowly straightening the arms to assume the original position. Repeat five times.



## INTRODUCTION TO POSTURAL EXERCISES.

Before taking up the postural exercises a word of explanation may perhaps be helpful. These exercises are for the correction of faulty posture or poise. The correct standing position is: head erect, chin in, shoulders up, chest elevated, and abdomen retracted. The spine should be straight, knees straight, and the weight evenly distributed between the heels and toes.

Incorrect posture is just the opposite. The head is down, the chin extended forward, shoulders round, chest sunken, abdomen prominent, knees slightly bent or over-extended, and the weight resting mainly on the toes or heels of the feet.

Incorrect posture means a strain on ligaments, joints, and muscles, general relaxation of the entire body, crowding of all the vital organs, and poor stamina. An individual with such a posture is below par physically and tires easily. Any effort which will convert an incorrect standing and walking position into a correct one is worth while, if for no other reason than the reduction of bodily wear and tear which results.

The exercises to follow are particularly valuable in correcting poor posture in children. As such defects begin in early childhood, we should begin their correction as early as possible by influencing growth along correct lines. The old aphorism—"As the twig bends, so will the tree incline," is very true of the human body.



## POSTURAL EXERCISE IN CHILDREN



The above picture was taken of two brothers. The one at the left shows the typical poor posture, with pendulous abdomen, lumbar lordosis, round shoulder, winged scapulæ, over-extended knees, flat feet, and narrow costal angle. The boy at the right shows the result of several months' treatment by exercise for a posture which was equally as bad as his brother's.



## GROUP III

### POSTURAL EXERCISES IN RECUMBENT POSITION





## GROUP III

### POSTURAL EXERCISES IN RECUMBENT POSITION

This set of exercises naturally leads up to the postural exercises performed in the standing position. Where the patient is bedfast, the exercises may be performed in the bed, but when possible they should be done with patient on table or floor. Make each movement precise and put your entire energy in the task at hand. Each motion described is for a purpose, and is not to be neglected.



## EXERCISE No. 1

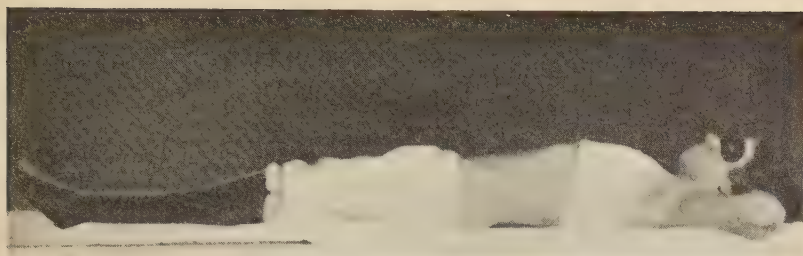


FIG. 1.

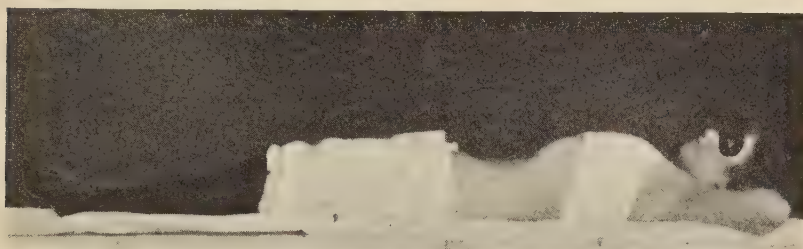


FIG. 2.

### EXERCISE No. 1. ABDOMINAL RETRACTION EXERCISE.

Position.—Lying on back, feet together, hands under the head, and chin down (Fig. 1).

Action.—The exercise is performed in two counts. Starting from position, on the count of one, contract the abdominal muscles, tipping the pelvis upward (Fig. 2). Hold this position for a few seconds. On the count of two, gently and slowly relax the pull.

Repeat the exercise ten times.

Note.—If the exercise is properly done the hollow in the small of the back will completely disappear.

## EXERCISE No. 2

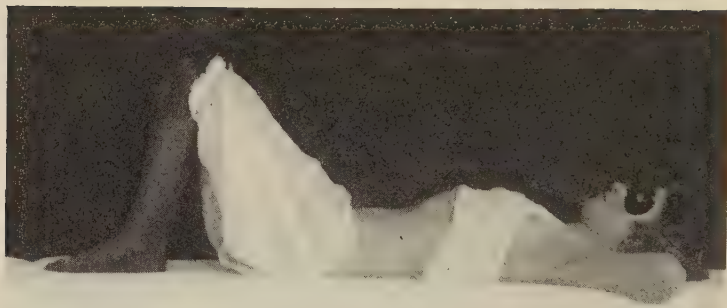


FIG. 1.



FIG. 2.

## EXERCISE No. 2

### EXERCISE No. 2. HIP FLEXION EXERCISE.

**Position.**—Lying flat on back, hands under head, knees flexed until the soles of the feet are resting on the table, hold the chin down (Fig. 1).

**Action.**—The exercise is performed in two counts. Starting from position, slowly and completely flex the knees, then completely flex the thighs on the abdomen, holding knees and feet together. This is done on the count of one (Fig. 2). Complete the exercise on the count of two by slowly extending hips and knees to the original position. Repeat ten times.

## EXERCISE No. 3

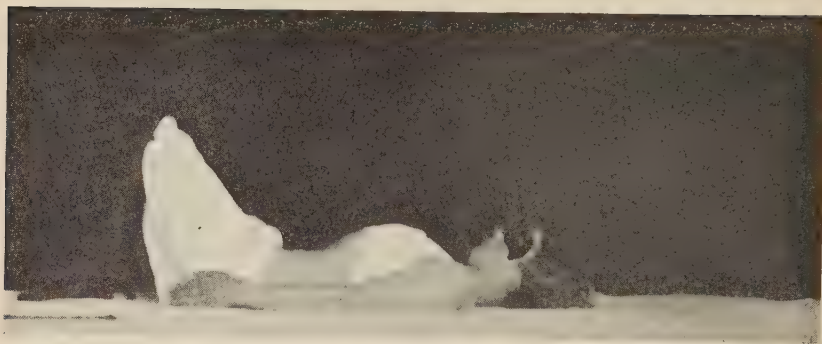


FIG. 1.



FIG. 2.



## EXERCISE No. 3

### EXERCISE No. 3. ARM CIRCUMDUCTION EXERCISE.

Position.—Lying on back with knees flexed, arms to sides, and chin down (Fig. 1).

Action.—Starting from position, move the arms forward and upward, describing a semicircle, until they have reached the position above the head (Fig. 2). Pause here a second, stretching up as much as possible and filling the lungs completely (through the nose). Now bring the arms down sideways along the bed or floor to the original position, and exhale through the mouth. In doing this exercise you should take a deep breath with each circle of the arms, holding the abdominal muscles in contraction and the pelvis tilted upward.

Repeat the exercise five times.

## EXERCISE No. 4

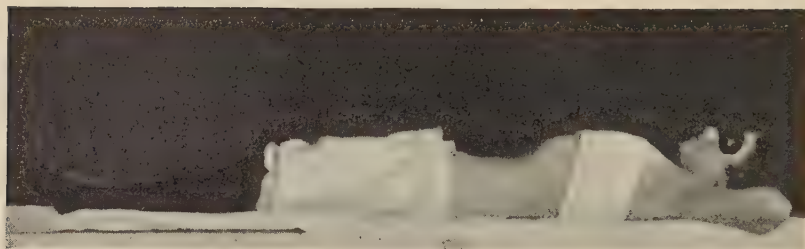


FIG. 1.

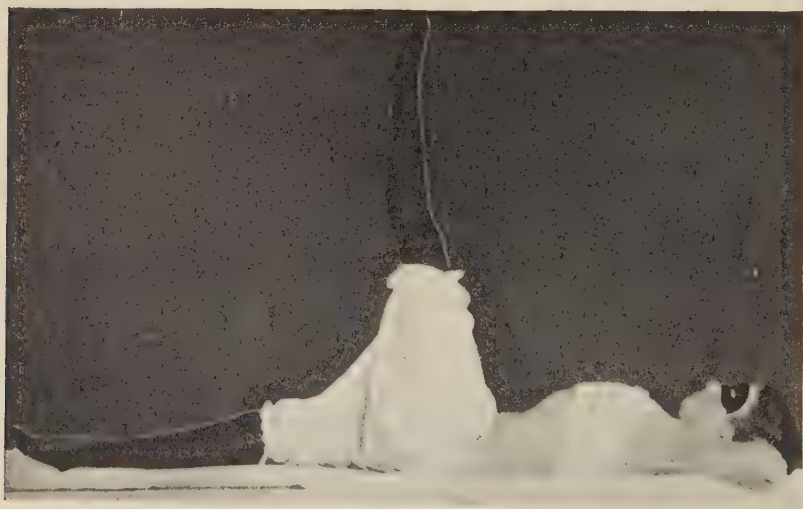


FIG. 2.

## EXERCISE No. 4

### EXERCISE No. 4. ALTERNATE STRAIGHT LEG RAISING EXERCISE.

Position.—Lying on back with feet together and hands under the head (Fig. 1).

Action.—The exercise is performed in two counts. Starting from position, slowly raise the left leg until it has reached a right angle with the body, keeping the knee and foot extended (Fig. 2). Hold this position for a few seconds, then complete the exercise on the count of two by slowly lowering the leg to the original position.

Keep the abdomen retracted and pelvis tilted upward.

Repeat this exercise with each leg alternately for five times.

## EXERCISE NO. 5

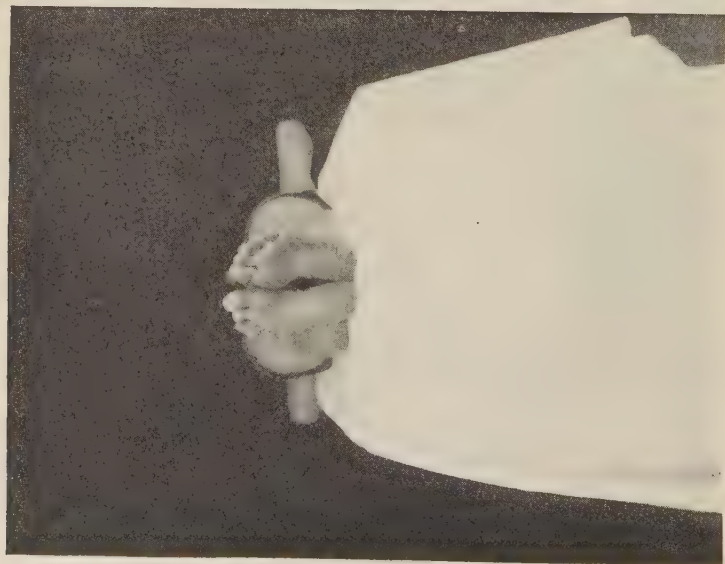


FIG. 1.



FIG. 2.

## EXERCISE No. 5

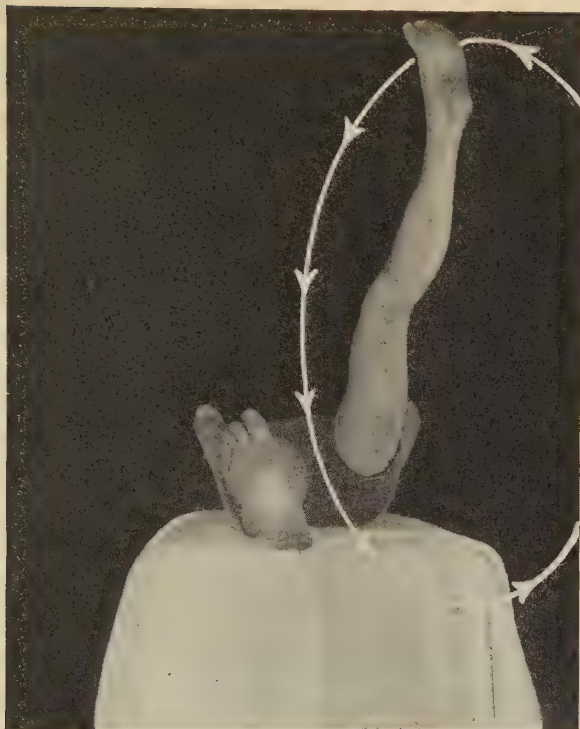


FIG. 3.

### EXERCISE No. 5. ALTERNATE STRAIGHT LEG CIRCUMDUCTION.

**Position.**—Lying on back with feet together and hands under the head (Fig. 1).

**Action.**—Starting with position, holding the leg straight, foot extended, and toes turned in slightly, move leg outward parallel with the floor (Fig. 2), then upward (Fig. 3), making as large a circle as possible and bringing the leg to the original position. Repeat with the opposite leg. Alternately repeat until each leg has made ten complete circles.

**Note.**—Keep leg rotated inward (toes turned in) through the entire circle.

## EXERCISE No. 6



FIG. 1.

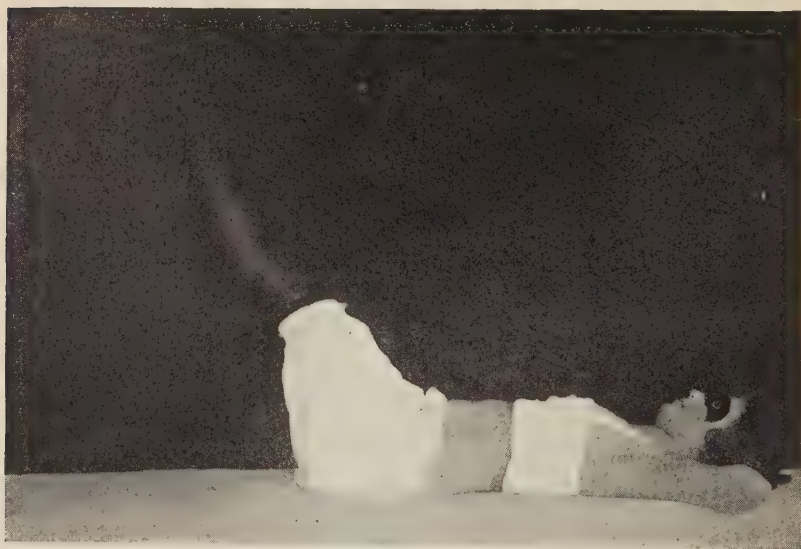


FIG. 2.



## EXERCISE No. 6



FIG. 3.

### EXERCISE NO. 6. FULL LEG FLEXION EXERCISE.

**Position.**—Lying on back, knees flexed, and hands under head (Fig. 1).

**Action.**—This exercise is done in four counts. Starting from position, on the count of one, straighten the legs completely, extending the ankles (Fig. 2). On the count of two, flex the straight legs upward to a right angle with the body (Fig. 3). On the count of three, bend the knees, holding the thighs straight. Complete the exercise on the count of four by lowering the flexed legs to the original position. Keep the feet and knees together during the entire exercise.

Repeat this exercise ten times.



## EXERCISE No. 7

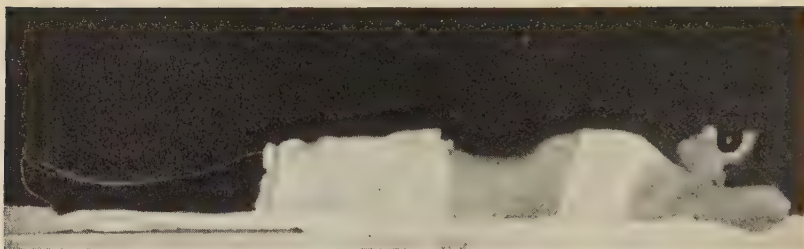


FIG. 1.



FIG. 2.

## EXERCISE No. 7

### EXERCISE No. 7. STRAIGHT LEG RAISING EXERCISE.

Position.—Lying on back with feet together, and hands under the head (Fig. 1).

Action.—The exercise is done in two counts. Starting from position, slowly raise both legs, keeping the knees straight and the feet extended, until they have reached a right angle with the body (Fig. 2). Hold this position for a few seconds, then complete the exercise on the count of two by slowly lowering the legs to the original position.

Keep the abdomen retracted and the pelvis tilted upward.

Repeat this exercise five times.



## EXERCISE No. 8

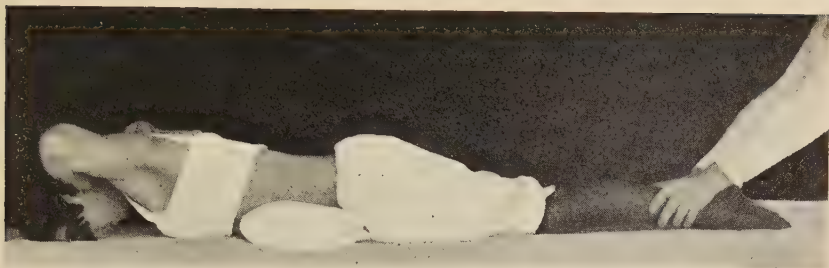


FIG. 1.

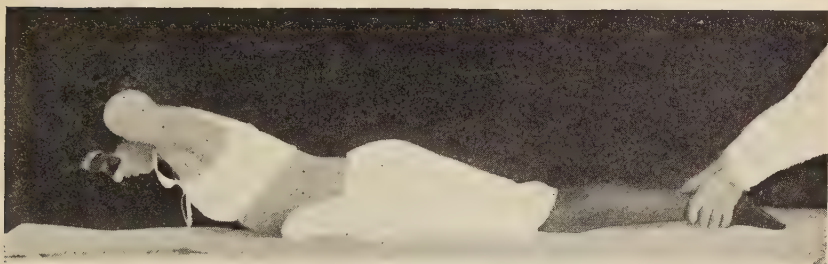


FIG. 2.

### EXERCISE No. 8. BACK EXERCISE.

**Position.**—Lying on face with pillow doubled under the abdomen, hands behind head and feet together. The feet must be held down firmly or securely supported under some portion of the bed (Fig. 1).

**Action.**—Slowly raise the head and shoulders as far as possible, clearing the bed or floor (Fig. 2). Hold this position for a few seconds, then slowly lower the head and shoulders to assume position one.

Repeat the exercise ten times

**Note.**—Do not attempt to do the exercise unless the feet are held firm against the bed or table.

## EXERCISE No. 9



FIG. 1.

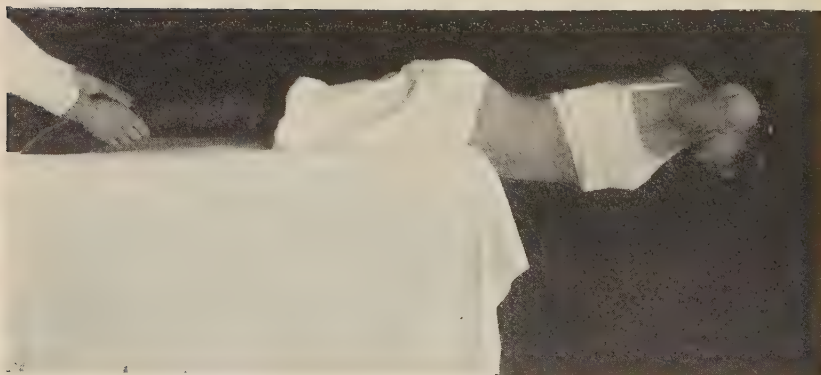


FIG. 2.

## EXERCISE No. 9

### EXERCISE No. 9. BACK-ABDOMINAL EXERCISE.

Position.—Lying over the edge of a table or bed, edge striking the body at the pelvis. Feet together and held by an attendant firmly to the table. Hands behind head, abdomen retracted and head on a line with the body (Fig. 1).

Action.—Pull the body upward until same is on a level with the table, holding back and neck firm (Fig. 2). The bend is entirely in the pelvis. Hold this position for a few seconds, then slowly lower the body to the original position.

Repeat the exercise five or six times.

Note.—This is excellent exercise to strengthen the muscles of the back.





**GROUP IV**  
**POSTURAL EXERCISES**  
(Standing)



## POSTURAL EXERCISES

### STANDING POSITION

It is of the utmost importance that these exercises be performed with exactness. If they are done in any other manner, very little will be accomplished, and your time will be practically wasted.

When possible, these exercises should be performed before a large mirror. In all the exercises, whether same is emphasized or not, the abdomen should be retracted and the pelvis tipped upward until the lower spine is straight or nearly so. The weight should not rest entirely on the toes or the heels, but be distributed between the two. In other words, the plumb-line axis of the body depends entirely on correct posture, and to keep it true, means keeping a perfect balance. If this axis is not correct, we hang on our ligaments and muscles, hence the general strain and fatigue.

## EXERCISE No. 1



FIG. 1.



FIG. 2.

## EXERCISE No. 1

### EXERCISE No. 1. BODY-BENDING EXERCISE.

**Position.**—Standing erect, pelvis tilted upward, abdomen retracted slightly, hands to sides, and feet eight inches apart, toes slightly in (Fig. 1).

**Action.**—Starting from position, slowly bend body forward, touching hands on floor and holding the knees straight (Fig. 2). Hold this position for a few seconds, then complete the exercise by slowly raising the trunk to the original position. Repeat this exercise ten times.

## EXERCISE No. 2



FIG. 1.

## EXERCISE No. 2

### EXERCISE No. 2. ABDOMINAL RETRACTION EXERCISE.

**Position.**—Standing with back against the wall, feet six inches apart and toes turned in, and heels against the wall, with arms to sides and palms of hands forward.

**Action.**—Retract the abdominal muscles and tilt the pelvis upward so the hollow of the back entirely disappears (Fig. 1).

Repeat this exercise ten times.



## EXERCISE No. 3



FIG. 1.



FIG. 2.

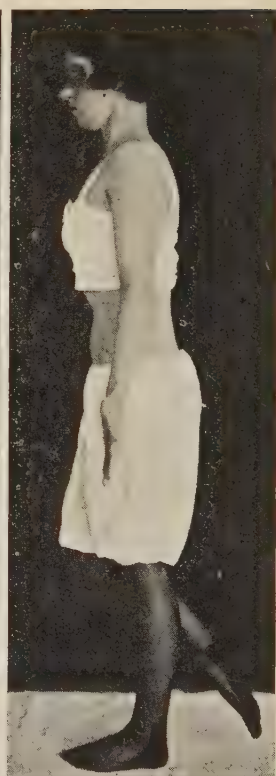


FIG. 3.

## EXERCISE No. 3

### EXERCISE No. 3. HEEL AND TOE EXERCISE.

**Position.**—Standing erect, head up and eyes forward, hands to the sides and palms forward, with heel of one foot directly in front and touching the toe of the other (Fig. 2).

**Action.**—Starting from position, stand balanced, retracting abdomen and stretching the body as tall as possible. Now balance the body weight on the forward foot, flexing the other leg at the knee and extending the foot (Fig. 1). Place this foot forward with its heel to toe of other foot (Fig. 2). Balance body in an erect position for a few seconds, then raise the rear foot to position in (Fig. 3), and proceed to walk slowly in this manner—at all times keeping the pelvis tipped upward, abdomen retracted, and holding the entire body in an erect position.

Take twenty-five to one hundred of these steps, maintaining correct position of the body throughout.



## EXERCISE NO. 4



Side View  
FIG. 1.



Back View  
FIG. 2.

### EXERCISE NO. 4. BODY-STRETCHING EXERCISE.

**Position.**—Standing with hands on hips; feet six inches apart with toes in and head up.

**Action.**—Starting from position, stretch the body up as far as possible without raising the shoulders (Figs. 1 and 2).

## EXERCISE NO. 5



FIG. 1.

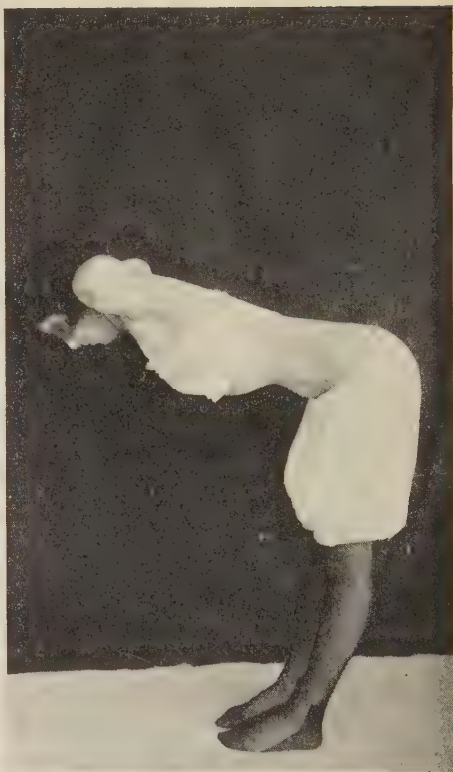


FIG. 2.

## EXERCISE No. 5

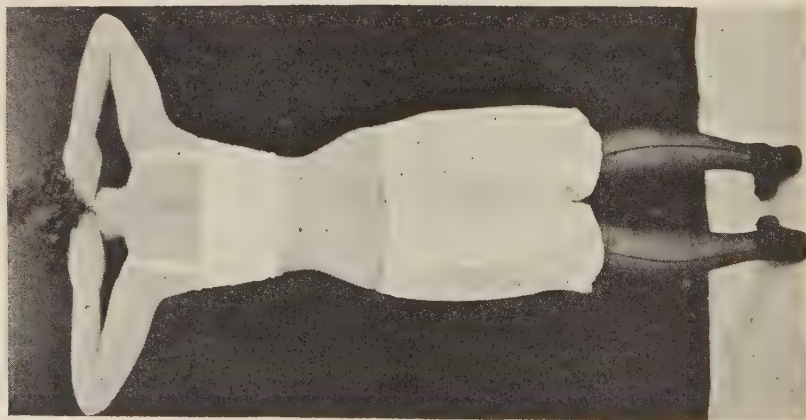
### EXERCISE No. 5. BODY-BENDING EXERCISE.

**Position.**—Standing with feet six inches apart and toeing in. Chin in, and hands behind head (Fig. 1).

**Action.**—Slowly bend forward as far as possible without dropping head, arms, or pelvis (Fig. 2). Hold this position for a few seconds, then complete the exercise by slowly assuming the original position. Keep the spine rigid and straight, taking all the bend at the pelvis.

Repeat this exercise five times.

## EXERCISE NO. 6





## EXERCISE No. 6

EXERCISE No. 6. LATERAL TRUNK-BENDING EXERCISE.

Position.—Standing with feet six inches apart with toes in, pelvis tilted upward, abdomen retracted, chin in and hands behind head (Fig. 1).

Action.—Bend alternately to the right and then the left without changing the relative position of the head and arms. Keep the pelvis as stationary as possible (Figs. 2 and 3).

Repeat the exercise ten times.

## EXERCISE No. 7



FIG. 1.



FIG. 2.

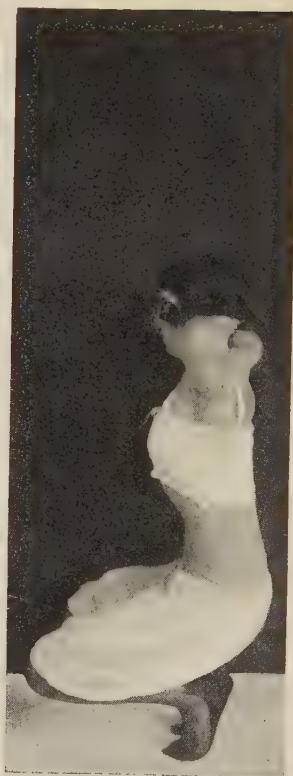


FIG. 3.

## EXERCISE No. 7

### EXERCISE No. 7. BALANCING EXERCISE.

**Position.**—Standing with heels together, toes slightly turned out, pelvis tilted upward, abdomen retracted, and hands behind head (Fig. 1).

**Action.**—Starting from position, raise heels, balancing body on toes, holding the same position of the trunk (Fig. 2). Hold this position for a few seconds, then slowly bend the knees until the buttocks rest on the heels, keeping the original position of the trunk unchanged (Fig. 3). Hold this position for a few seconds, then straighten knees to position two, and slowly lower heels to the original position.

Repeat this exercise about five times.

## EXERCISE No. 8

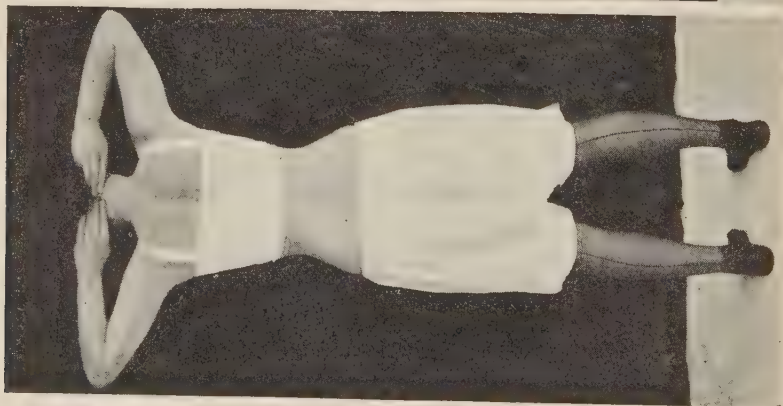


FIG. 1.

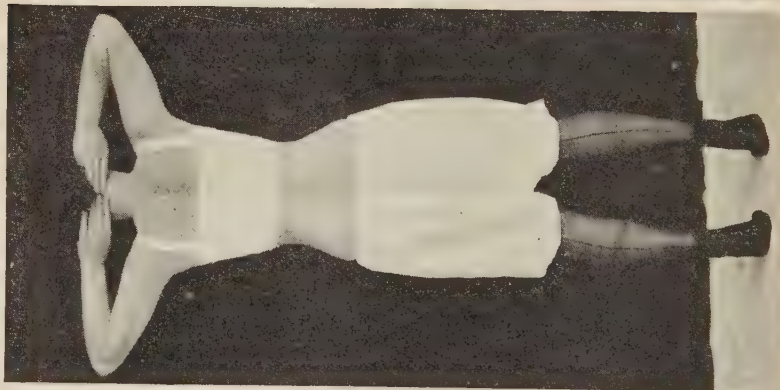


FIG. 2.

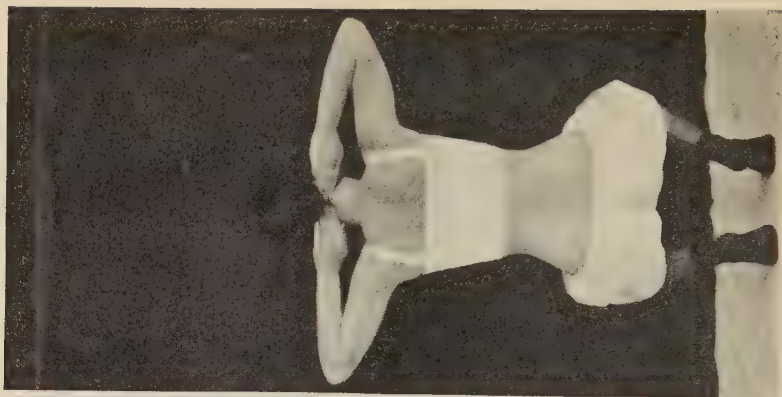


FIG. 3.

## EXERCISE No. 8

EXERCISE No. 8. TRUNK-BENDING AND BALANCING  
EXERCISE. (FEET APART.)

Position.—Same as Exercise 7, but with feet eight inches apart and toes turned slightly in.

Action.—Same as Exercise 7 (Figs. 1, 2, and 3).

## EXERCISE No. 9

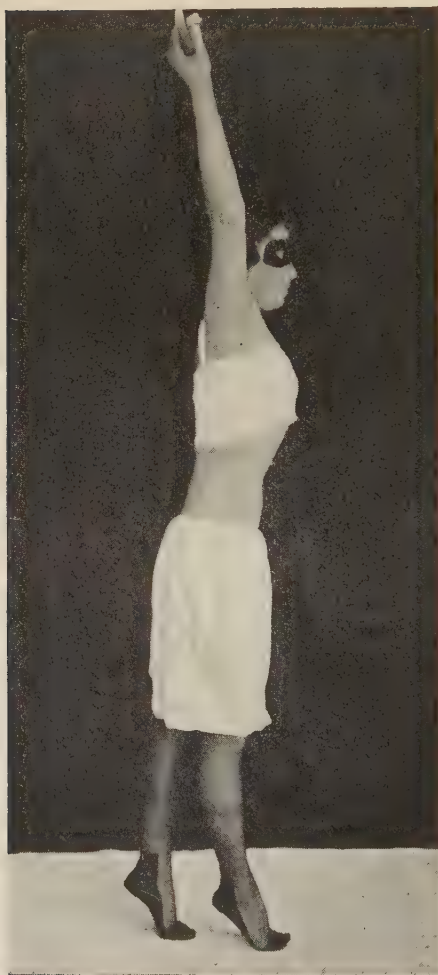


FIG. 1.

## EXERCISE No. 9

### EXERCISE No. 9. TRUNK-STRETCHING EXERCISE.

**Position.**—Standing on toes, one foot in front of the other, pelvis tilted upward, abdomen retracted, and holding wand with both hands high over head (Fig. 1).

**Action.**—Stretch the wand as high as possible over the head, keep the entire body stretched as much as possible, and walk slowly on the tips of the toes (Fig. 1).

Take 25-50 steps in this position.



## EXERCISE No. 10

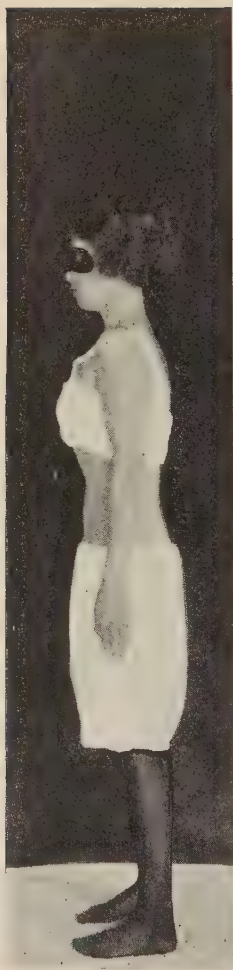


FIG. 1.



FIG. 2.  
(Side View.)



FIG. 3.  
(Back View of Fig. 2.)

## EXERCISE No. 10

### EXERCISE No. 10. DEEP BREATHING EXERCISE WITH ARM CIRCUMDUCTION.

**Position.**—Standing with feet eight inches apart, toes turned in slightly, abdomen retracted, hands to sides, pelvis tilted upward, and head erect (Fig. 1).

**Action.**—Slowly raise arms forward and upward to positions two and three, breathing in through the nose. Hold position three for a few seconds, filling the lungs to a full capacity. (Be careful to keep the pelvis tipped upward and that the shoulders do not sway backward.)

Now lower arms down sideways to position one, exhaling as the arms come down.

The pelvis and spine should be held as stationary as possible through the exercise.

Repeat ten times.



**GROUP V**  
**FOOT EXERCISES**



## INTRODUCTION TO FOOT EXERCISES

Abnormalities of the feet are not only painful but incapacitating. Omitting any technical discussion of the various causes of painful feet, it may be broadly stated that many of them are due in large part to lack of muscle tone and balance. While in most cases supports of various kinds are a necessary part of treatment, much can be done to relieve pain and secure lasting benefit, by improving the tone of the various muscles which support the arches of the foot.

The following exercises are designed to strengthen the various muscle groups whose function it is to give support and elasticity to the feet.

## EXERCISE No. 1



FIG. 1.



FIG. 2.



## EXERCISE No. 1 ✓

### EXERCISE No. 1. FLEXION AND EXTENSION EXERCISE.

This exercise develops the musculature which supports the long arch of the foot.

Position.—Sitting with legs crossed.

Action.—Fully extend (Fig. 1) then fully flex at the ankle, turning the sole of the foot in as far as possible (Fig. 2).

This exercise should be done ten to twenty times with each foot.

## EXERCISE No. 2

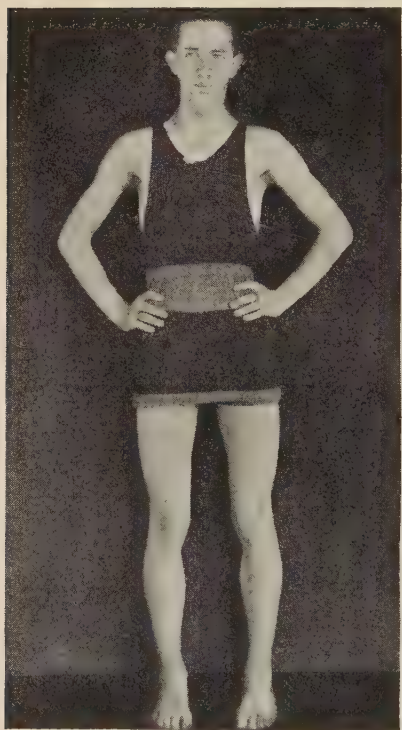


FIG. 1.

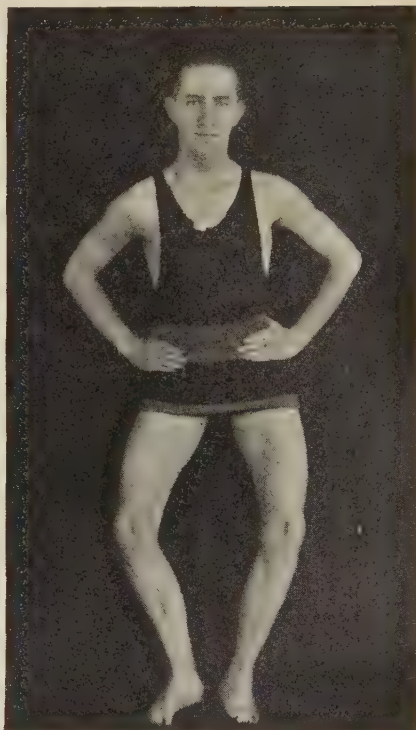


FIG. 2.

## EXERCISE No. 2

### EXERCISE No. 2. FOOT-ADDUCTION EXERCISE.

This exercise stretches the internal rotators of the thigh and aids in correct walking by training the toes to point forward.

**Position.**—Standing with feet parallel and about four inches apart. Hands on hips and head up (Fig. 1).

**Action.**—Keeping the toes firmly on the floor, slightly bend the knees and gradually separate them by rolling the knees outward (Fig. 2).

Return to the original position and repeat ten times.



## EXERCISE No. 3



FIG. 1.



FIG. 2.

### EXERCISE No. 3. TOE-SPREADING EXERCISE.

This exercise develops the muscles which support the anterior or metatarsal arch.

**Position.**—Sitting, resting the heel on floor and toes flexed (Fig. 1).

**Action.**—Extend and spread the toes as far as possible (Fig. 2). Hold the toes in this position for a few seconds, then complete the exercise by flexing the toes into the original position.

Repeat the exercise ten to twenty times for each foot.



## EXERCISE No. 4



FIG. 1.



FIG. 2.

### EXERCISE No. 4. HEEL-STRETCHING EXERCISE.

This exercise stretches the heel tendon, which in many cases is short. This shortness when it occurs favors foot strain.

**Position.**—Sitting with foot flat on the floor (Fig. 1).

**Action.**—Flex the foot upward, flexing toes downward, and pulling the foot inward. Pull the foot up and in as far as possible (Fig. 2). Then complete the exercise by slowly lowering the foot to its original position. The exercise should be performed ten to twenty times, then repeated with other foot. Keep the heel stationary on the floor.



## EXERCISE No. 5



FIG. 1.



FIG. 2.

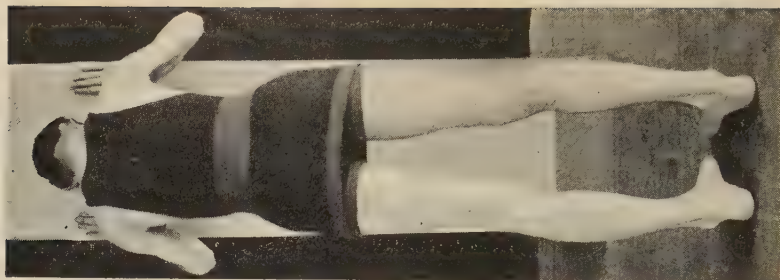


FIG. 3.



## EXERCISE NO. 5

### EXERCISE NO. 5. STANDING HEEL-STRETCHING EXERCISE.

This exercise stretches the heel tendon and strengthens the musculature of the foot.

**Position.**—Standing, facing and three to four feet from the wall. Toes slightly turned in and feet eight inches apart (Fig. 1).

**Action.**—Lean on wall with arms straight, back rigid, and head up. Slowly flex the arms, holding the back straight, and keeping the heels firmly on floor until the head touches the wall, or as near as possible, rolling the foot out (Figs. 2 and 3). Hold this position for a few seconds, then slowly straighten the arm, assuming the original position.

Repeat the above action eight to ten times.

If you are doing the exercise properly, you will feel the pull in the muscles on the back of the calf and thigh.

Repeat five to ten times.





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